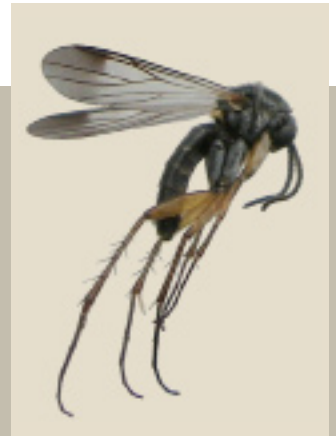


## Fungus Gnats Recording Scheme

Newsletter 3

Autumn 2009



### Progress on Distribution Maps of Fungus Gnats of the British Isles

BRC have continued to input data and this is now completed up to and including data gathered in 2008. Whether any further data is included on the final maps will depend on how long until publication is practicable. I again express my gratitude to all who have submitted specimens and records that have contributed towards these maps.

#### *Mycetophila cingulum* and *M. sigmoides*

Since drawing attention to the presence of *M. sigmoides* in Britain in the previous newsletter, an article by David Gibbs has appeared in *Dipterists Digest*, giving the distinctions between these species and listing all data so far obtained for *M. sigmoides*, indicating that it is now widespread in southern England. Further specimens have been identified in other collections but the earliest known record in this country is still from 1998 so there is a strong likelihood that this species is a recent immigrant here.

#### Digest Gnats

The paper by David Gibbs cited above also added *Exechiopsis seducta* to the British list, on the basis of a single specimen found at Elveden Center Parc, Suffolk. This species is widespread but uncommon in Europe but in view of the location of this find the possibility that it is yet another recent introduction with imported plants cannot be excluded.

Also in this issue of the Digest there is a note by Keith Alexander and Judy Webb recording *Ditomyia fasciata* as new to Wales and an article by John Dobson concerning field observations of *Asindulum nigrum*, which has recently been accorded the English name of the **Fen Flower Gnat** on account of it having been selected as a BAP priority species. He found that he was able to locate these gnats at rest on grass stems within a dense sward of tall, ungrazed, grassland in one of its known sites at Winnall Moor, Hampshire

#### Nursery Gnats

The paper mentioned last time about four species of South American gnats that have, like *Leia arsona* previously known from these situations, become established in nurseries in the Netherlands has now been published (Chandler & Pijnakker 2009). Diagnostic characters are described and figures are provided of male genitalia and wings for each species. Discovery of these species in the British Isles is awaited with trepidation by horticulturalists.

#### *Urytalpa* revised

Kjærandsen et al. (2009) have revised the North European and North American species of the keroplatid genus *Urytalpa* Edwards. In addition to figures of genitalia and wings there are illustrations of whole insects in colour, including the three British species. A key to the world species of *Urytalpa*, compiled from the literature, is also included.

The authors uncovered previously unsuspected nomenclatural problems, resulting in the need to fix a new type species. They found that F.W. Edwards and subsequent authors had misidentified the type of *Platyura ochracea* Meigen, 1818 and had used the name for the common *Urytalpa* species that has been so called. In fact it was another common species in the genus *Orfelia* for which Staeger's 1840 name of *unicolor* has been used. Consequently the *Orfelia* is now to be known as *Orfelia ochracea* (Meigen) while the next senior name of *Urytalpa dorsalis* (Staeger) is to be used for the *Urytalpa* species.

#### An infestation of truffles – a gnat that can sniff them out

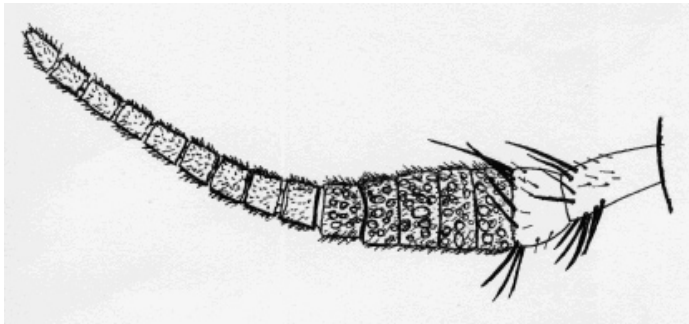
I recently received from Chris Thompson photographs and subsequently specimens of fungus gnats that had been found to be infesting truffles being cultivated in Tennessee and had been forwarded to him by the grower. The truffles concerned are of French origin, the prized Périgord ("Black Winter") variety. It was evident from the photographs that the gnats belonged to the genus *Stigmatomeria*, characterised by a dark mark on the mid and hind coxae, as seen in this photograph of part of one of the Tennessee gnats.



This was very interesting as little has been recorded of the biology of this genus except a comment by Edwards (1925) under the old name of *Allodia crassicornis* that it had been bred from *Tuber* (then a loose generic term covering a range of truffles). He did not state the provenance of the record but this new discovery lends support to its accuracy.



The above photograph shows a male, which has relatively slender antennae. Females of *Stigmatomeria* have the base of the flagellum swollen with the flagellomeres of this basal part bearing numerous irregularly distributed (probably sensory) pits, as shown below in a figure of one of the Tennessee females.



As this is an uncommon character among fungus gnats Jostein Kjærandsen (pers. comm.) has suggested a connection to the females sniffing for truffles like pigs or dogs. He may take some SEM pictures of the female antenna to try to uncover the structure of these pits and sensilla in more detail.

*Stigmatomeria crassicornis* is the only species of this genus found in the British Isles and has been regarded as Holarctic in distribution, North American specimens having been assigned to this name. However, a second species *S. obscura*, till recently confused with it, has now been recognised as distinct in Europe and this is mentioned in the Swedish checklist (Kjærandsen et al. 2007), where it is stated that *S. obscura* differs in having more slender lobes of the gonostylus than in *S. crassicornis* but comparative figures have not yet been published. I am grateful to Jostein Kjærandsen for forwarding to me photographs of the male genitalia of Scandinavian specimens of the two species, taken in rear view with the lobes of the gonostyli splayed out laterally, which are reproduced here. From these it was possible to confirm that all available British specimens were *S. crassicornis* while I have a few examples of *S. obscura* from eastern Europe.

North American specimens are very similar to those from Europe but Jostein considers that they are specifically distinct, although with some variation tending more towards *S. obscura* and some approaching *S. crassicornis*, and is preparing a paper on this subject. The Tennessee specimens that I have forwarded to Jostein

appear to belong to the latter species so must have colonised the truffles there rather than having been imported from France with the original stock.

Further observations to confirm whether there is a specific association with truffles would be interesting, but the absence of any other information on the biology of these common gnats could be explained if they normally develop in subterranean fungi. Some other flies, the syrphid *Cheilosia soror* and several species of *Suillia* (Heleomyzidae) are known to regularly develop in truffles. Marie-Anne French, who exhibited specimens of *Cheilosia* and *Suillia* that she had reared from truffles at a BENHS Exhibition a few years ago, recently sent me some further heleomyzids that she had reared but confirmed that she had not reared any fungus gnats from these fungi.

*Stigmatomeria crassicornis* (Stannius, 1831)  
Norway, MRY: MZLU-SPM-034404



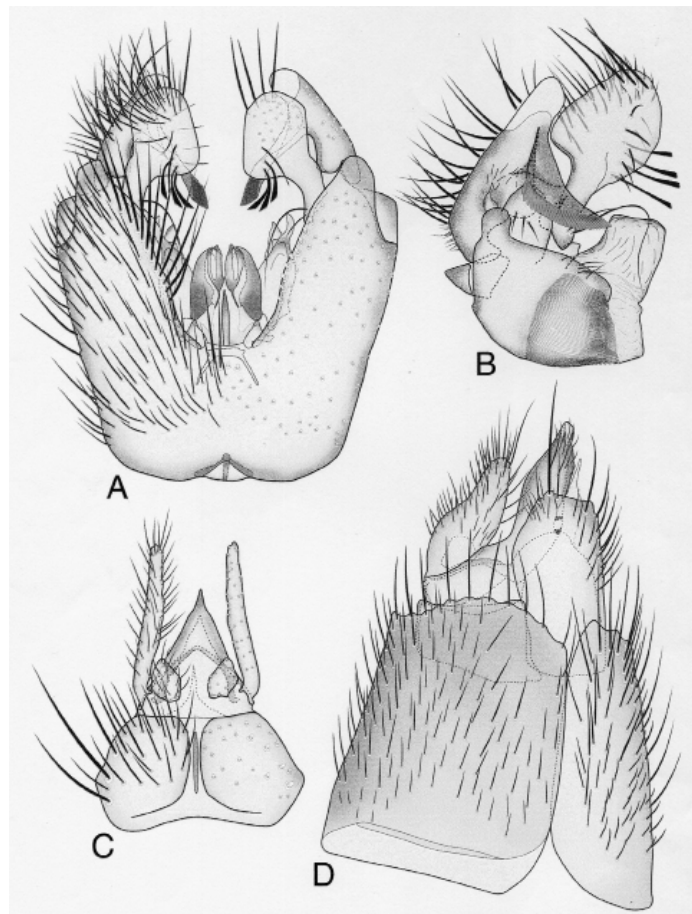
*Stigmatomeria obscura* (Winnertz, 1863)  
Sweden, SK: MZLU-SPM-015326



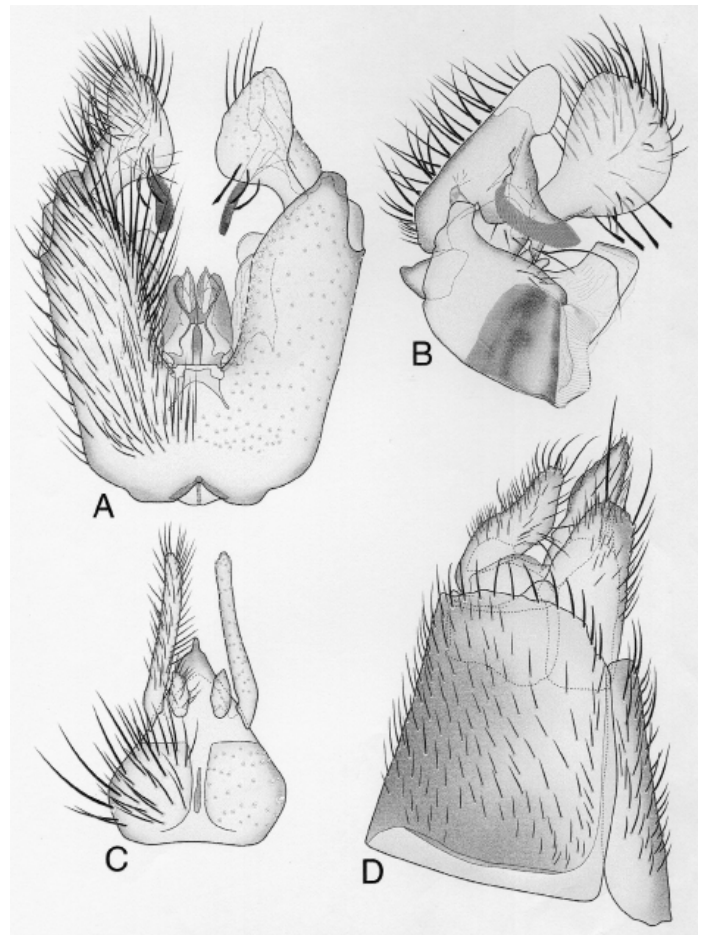
## Till recently unrecognised sibling species in *Pseudexechia*

A recent paper by Jostein Kjærandsen (2009) revises the European fauna of this genus, from which it is apparent that there are four species in Europe that have been previously confused under *P. trisignata* by various authors. As indicated in the checklist changes section of the latest Digest, British specimens previously assigned to *P. trisignata* belong to two of these species, *P. trisignata* itself which was described from British material by F.W. Edwards and the newly described *P. tuomikoskii* Kjærandsen.

Re-examination of available British specimens has shown that both species are widespread so it is not yet possible to assign most earlier records to either species and in particular any records for which specimens have not been retained can only be placed to *trisignata* agg. In his paper Jostein indicated that the figures given for *P. trisignata* in my paper (1978) on the genus *Pseudexechia* were in fact of *P. tuomikoskii*, thus accounting for differences of detail from the figures given by Edwards (1913).



*Pseudexechia trisignata* genitalia (from Kjærandsen 2009).



*Pseudexechia tuomikoskii* genitalia (from Kjærandsen 2009).

The figures of the two British species of this complex are reproduced here from Jostein's paper. In each case A = male genitalia in ventral view, B = internal view of male gonostylus, C = male tergite 9 and cerci in dorsal view and D = lateral view of female ovipositor. In the male the angled dorsal edge of the ventral lobe of the gonostylus (that bearing thickened blunt setae) is characteristic of *P. trisignata* while this is smoothly sloping in *P. tuomikoskii*. In the female of *P. trisignata* tergite 7 has a slightly scalloped apical margin with longer marginal hairs, while this margin is smoother in *P. tuomikoskii*.

### Acknowledgements

I am grateful to Chris Thompson for the photograph of American *Stigmatomeria* and to Jostein Kjærandsen for supplying the photographs of *Stigmatomeria* genitalia and for the use of his figures of *Pseudexechia*, reproduced from his paper, for which Zootaxa is also to be thanked.

### References

- Alexander, K.N.A. & Webb, J.A. (2009). *Ditomyia fasciata* (Meigen) (Diptera, Ditomyiidae) new to Wales from Monmouthshire, plus details of some previously unpublished Gloucestershire records. *Dipterists Digest* (Second Series) 16: 13.
- Chandler, P.J. (1978). Notes on the Holarctic species of *Pseudexechia* Tuomikoski (Diptera: Mycetophilidae), with the description of a new British species. *Entomologist's Record & Journal of Variation* 90: 44-51.
- Chandler, P.J. & Pijnakker, J. (2009). Tropical fungus gnats established in nurseries in the Netherlands (Diptera: Keroplatidae and Mycetophilidae). *British Journal of Entomology & Natural History* 22: 81-93.

- Dobson, J. (2009).** Notes on recording the Fen Flower Gnat *Asindulum nigrum* Latreille, 1806 (Diptera, Keroplatidae), a BAP Priority Fly. Dipterists Digest (Second Series) 16: 1-2.
- Edwards, F.W. (1925).** British Fungus-Gnats (Diptera, Mycetophilidae). With a revised Generic Classification of the Family. Transactions of the Entomological Society of London 73: 505-670.
- Gibbs, D. (2009).** Two Fungus Gnats (Diptera, Mycetophilidae) new to Britain. Dipterists Digest (Second Series) 16: 7-13.
- Kjærandsen, J. (2009).** The genus *Pseudexechia* Tuomikoski re-characterized, with a revision of European species (Diptera, Mycetophilidae). Zootaxa 2056: 1-45.
- Kjærandsen, J., Hedmark, K., Kurina, O., Polevoi, A., Økland, B. & Götmark, F. (2007).** Annotated checklist of fungus gnats from Sweden (Diptera: Bolitophilidae, Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae). Insect Systematics & Evolution, Supplement No. 65, 128 pp.
- Kjærandsen, J., Martinssen, J., Hedmark, K. & Evenhuis, N.L. (2009).** On the genus *Urytalpa* Edwards (Diptera: Keroplatidae) in the Nordic and Nearctic Regions, with the fixation of a new type species and a key to world males. Zootaxa 2160: 29-50.

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